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09/927,906	08/09/2001	Chakki Kavoori	I4303.0053	5185

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EXAMINER

TANG, KENNETH

ART UNIT	PAPER NUMBER
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2195

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/927,906

Applicant(s)

KAVOORI ET AL.

Examiner

KENNETH TANG

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 26-34 is/are pending in the application.
- 4a) Of the above claim(s) 18-25 and 35-40 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29-34 is/are allowed.
- 6) ☐ Claim(s) 1-4, 6, 8-9, 11-13, and 26-28 is/are rejected.
- 7) ☐ Claim(s) 5, 7, 10 and 14-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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DETAILED ACTION

1. Claims 1-17 and 26-34 are presented for examination.
2. Claims 18-25 and 35-40 have been withdrawn by the Applicant as non-elected claims without traverse in a Restriction Requirement. Applicant is required to cancel the withdrawn claims.
3. This action is in response to the Amendment/Response on 4/10/08. Applicant's arguments have been fully considered but were not found to be persuasive.

Allowable Subject Matter

4. Claims 29-34 are allowed.
5. Claims 5, 7, 10, and 14-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims in addition to overcoming any rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. **Claims 1, 3-4, 6, 8-9, 12, and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleeson (US 6,353,846 B1) in view of Rawson et al. (hereinafter Rawson) (US 5,692,204).**

7. As to claim 1, Fleeson teaches a wireless communication device (software definable radio, col. 3, line 19) having a processor, a computer readable memory, and at least one hardware resource coupled to each other (Fig. 2), a method of operating the hardware resources comprising:

a) locating a first address (address for the first required resource module, modem Fig. 6) in the computer readable memory of the wireless communication device, the first address containing operating information (col. 9, lines 48 – 64) associated with a first hardware resource (first resource module in the link object);

b) transmitting operating information associated with the first address to the first hardware resource (col. 12, lines 18 – 20);

wherein the method is performed in real time while the wireless communication device is operating (col. 11, lines 27 – 31).

8. In summary, Fleeson teaches a link object storing all the required resource modules in a list to implement a function (col. 9, lines 41 – 44). The resource manager sequentially programs all of the listed resource modules with the required parameters in response to a user selecting a new virtual communication unit (VCU) in real time (col. 11, line 27 – col. 12, line 25).

9. Fleeson does not explicitly teach a pointer associated with the first address that

locates a subsequent address for a subsequent hardware resource. Specifically, Fleeson teaches a list of resource modules. However, Fleeson fails to teach the detail to sequentially access each of the resource modules in the list.

10. Rawson et al teach another communication device (col. 3, lines 19 – 21) having a resource list with a plurality of required resource modules (Fig. 3). Specifically, the resource list is implemented as a linked list such that each entry has a pointer pointing to the next required resource module (col. 6, lines 57 – col. 7, line 4). Once the first entry of the list is located, the system obtains the parameters for the next resource module based upon the pointer of the previous resource module. The system repeats the process in real time until all the resource modules are programmed accordingly. “A process is promoted to the run queue if it is not blocked waiting on any other system event AND it has all of its resource requirements satisfied” (col. 8, lines 27-30 and emphasis added by the Examiner). The system, inherently has to traverse the resource linked list for the selected process in real time to complete the stated functions.

11. It would have been obvious to one of ordinary skill in the art to combine the teachings of Fleeson and Rawson because they both teach a resource list having a plurality of modules. Rawson’s explicit teaching of using a linked list to implement the resource list would allow a skill in the art to access Fleeson’s resource list.

12. As per claim 3, Fleeson teaches the invention as claimed, including the wireless communication device recited in claim 1 wherein the method further comprises the step of:

repeating steps a) through c) for each of multiple sets of operating information associated with multiple uses of the hardware resource (see Abstract, col. 4, lines 7-22, col. 9, lines 35-47, col. 12, lines 14-20).

13. As per claim 4, Fleeson teaches the invention as claimed, including the wireless communication device recited in claim 3 wherein the multiple sets of operating information are utilized within a system cycle (col. 3, lines 1-25 and 50-63, col. 4, lines 1-16). Applicant's Specification, on page 12, lines 30-31, states that a system cycle can be referred to as a virtual resource.

14. As per claim 6, Fleeson teaches the invention as claimed, including the wireless communication device recited in claim 1 wherein the information for operating the first hardware resource includes semi-static hardware control parameters (col. 4, lines 8-13).

15. As per claim 8, Fleeson in view of Rawson is silent in wherein the information for operating the first hardware resource includes dynamic hardware control parameters. However, it is well known to one of ordinary skill in the art that parameters could purposely be chosen to be static or dynamic depending on need. Static parameters are parameters which do not vary during time. Dynamic parameters are able to vary and thus can provide for more flexibility. It would be obvious to one of ordinary skill in the art for the parameters of Fleeson in view of Rawson to be dynamic so that it could take advantage of this flexibility.

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16. As per claim 9, Fleeson teaches the invention as claimed, including the wireless communication device recited in claim 8 wherein the dynamic hardware parameters are controlled by dedicated hardware resources (col. 4, lines 8-22, col. 6, lines 20-32).

17. As per claim 12, Fleeson teaches the wireless communication device recited in claim 1 wherein the hardware resources include at least one downlink transmitter element (col. 3, lines 19-25, col. 4, lines 14-22).

18. As per claim 26, Fleeson teaches the invention as claimed, including a wireless communication device having a processor, a means for performing the method of claim 1 (col. 3, lines 64-67 through col. 4, lines 1-22, Fig. 1, item 8).

19. As to claim 27, Fleeson teaches a method of controlling hardware resources in a wireless communication device having a processor and a memory coupled to each other, the method comprising:

locating a first memory address (col. 9, lines 48 – 64) in the memory associated with a first hardware resource (address for the first required resource module, modem, Fig. 6);

transmitting control information associated with the first memory address to the first hardware resource to enable utilization of the first hardware resource (col. 12, lines 18 – 20); and

wherein the method is performed in real time while the wireless communication device is operating (col. 11, lines 27 – 31).

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20. In summary, Fleeson teaches a link object storing all the required resource modules in a list to implement a function (col. 9, lines 41 – 44). The resource manager sequentially programs all of the listed resource modules with the required parameters in response to a user selecting a new virtual communication unit (VCU) in real time (col. 11, line 27 – col. 12, line 25).

21. Fleeson does not explicitly teach determining a pointer associated with the first address that locates another memory address for a subsequent hardware resource. Specifically, Fleeson teaches a list of resource modules. However, Fleeson fails to teach the detail to sequentially access each of the resource modules in the list.

22. Rawson et al teach another communication device (col. 3, lines 19 – 21) having a resource list with a plurality of required resource modules (Fig. 3). Specifically, the resource list is implemented as a linked list such that each entry has a pointer pointing to the next required resource module (col. 6, lines 57 – col. 7, line 4). Once the first entry of the list is located, the system obtains the parameters for the next resource module based upon the pointer of the previous resource module. The system repeats the process in real time until all the resource modules are programmed accordingly. “A process is promoted to the run queue if it is not blocked waiting on any other system event AND it has all of its resource requirements satisfied” (col. 8, lines 27-30 and emphasis added by the Examiner). The system, inherently has to traverse the resource linked list for the selected process in real time to complete the stated functions.

23. It would have been obvious to one of ordinary skill in the art to combine the teachings of Fleeson and Rawson because they both teach a resource list having a

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plurality of modules. Rawson's explicit teaching of using a linked list to implement the resource list would allow a skill in the art to access Fleeson's resource list.

24. As per claim 28, it is rejected for the same reasons as stated in the rejection of claim 27. In addition, Fleeson teaches the structure to support the method of claim 27 (col. 3, lines 64-67 through col. 4, lines 1-22, Fig. 1, item 8).

25. **Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fleeson (US 6,353,846 B1) in view of Rawson et al. (hereinafter Rawson) (US 5,692,204), and further in view of Pelham et al. (hereinafter Pelham) (US 4,967,375).**

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26. As per claim 2, Fleeson in view of Rawson is silent wherein the wireless communication device recited in claim 1 wherein the method further comprises the step of: e) returning to the first pointer when all of the quantity of pointers has been exhausted in a list stored in memory. However, Pelham discloses using a pointer that points to current memory location in memory and returning to its first pointer location, exhausting the list stored in memory (col. 34, lines 28-39). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of returning to the first pointer when all of the quantity of pointers has been exhausted in a list stored in memory to the existing pointers to memory in Fleeson in view of Rawson. The suggestion/motivation for doing so would have been to provide the predicted result of having an indication that all objects have been traversed and retraversed (col. 34, lines 31-33).

27. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fleeson (US 6,353,846 B1) in view of Rawson et al. (hereinafter Rawson) (US 5,692,204), and further in view of Quick, Jr. (US 5,673,259).

28. As per claims 11, Fleeson and Rawson are silent wherein the hardware resources include at least one searcher element. However, Quick, Jr. discloses a remote communication unit 108 that has one or more searcher elements 210 (see Fig. 2, col. 8, lines 6-20). It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the VCU of Fleeson in view of Rawson such that it would contain one or more searcher elements as in the

remote communication unit of Quick. The suggestion/motivation would have been to provide the predicted result of searching for information signals received (col. 8, lines 6-20).

29. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fleeson (US 6,353,846 B1) in view of Rawson et al. (hereinafter Rawson) (US 5,692,204), and further in view of Arazi et al. (hereinafter Arazi) (US 2001/0041594 A1).

30. As per claim 13, Fleeson in view of Rawson is silent wherein the hardware resources include at least one matched filter element. Fleeson does teach having signal processing components for its communication device, VCU (col. 1, lines 48-64). Fleeson is silent in that at least one matched filter element is used. However, Arazi discloses that using a matched filter is a known technique for signal detection for communication between a mobile device and one or more base stations ([0383]-[0384]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use one or more matched filter elements to the communication device of Fleeson in view of Rawson. The motivation for doing so would have been to provide signal detection and an estimation of signal quality, for example ([0383]-[0384]).

Response to Arguments

31. *Applicant argues that the required properties for each resource module, however, are not transmitted to the respective resource module during operation. Rather, they are merely*

compared with the actual resource module properties to determine whether the specific resource module is available for VCU (virtual communication unit) operation.

In response, the Examiner respectfully disagrees. Col. 11, lines 7-13 and 27-31 shows that the wireless device/VCU can be reconfigured in real-time. In addition, Fig. 12A, item 62 shows the receiving of transmitted commands for the VCU. Furthermore, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., required properties for each resource module are transmitted) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Therefore, Applicant's arguments were not found to be persuasive.

32. *Applicant argues that Fleeson's "parameter values" of the VCU are not equivalent to "operating information" as claimed by the Applicant.*

During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969).

The Examiner respectfully disagrees and asserts that Fleeson's program modules with parameters of the virtual communication unit (col. 12, lines 14-20, etc.) satisfies the broadest

reasonable interpretation of "operating information" as claimed. Therefore, the limitation of "operating information" is taught in the reference of Fleeson, and Applicant's argument was not found to be persuasive.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- **Brown et al. (US 6,826,672 B1)** discloses a data processing system, eg. handheld device such as a mobile phone or personal digital assistant (PDA), has a pointer having an address pointing into a segment of memory, and a finger field which denotes a block of a segment into which address it points (See Abstract).
- **Laurenti et al. (US 6,598,151 B1)** discloses pointer management for processors used in mobile telecommunications applications with the advantage of increasing processor performance while keeping power consumption as low as possible (See Abstract).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH TANG whose telephone number is (571)272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kenneth Tang/
Examiner, Art Unit 2195

/Meng-Ai An/
Supervisory Patent Examiner, Art Unit 2195

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